

THE ENTOMOLOGY OF PLINY THE ELDER

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During the reign of Tiberius, cruel pauciloquent paramount, despiser of Roman nobles, rabble, pomp and popularity, able campaigner and parsimonious public administrator, who was heartily hated and who ruled the Roman empire efficiently before retiring to his twelve villas at Capri where legend has him indulging in vice and framing new styles of satyriasis; during his reign was born Gaius Plinius Secundus, destined to become a bibliophile and plunderer of the past.

Born about 23 A.D., Verona, Como and Rome have all been claimed as birthplaces, but his family lived at Como and here he owned property. For his education he was sent to Rome, where he studied under Appion, and enjoyed the facilities afforded by his affluence and high connections. At the age of twenty-three he entered the army and as commander of a troop of cavalry under Lucius Pomponius, he traveled over the frontier of Germany visiting the Chauci and sources of the Danube. Returning to Rome in 52 he studied law but abandoned it after some unsuccessful cases. Returning then to Como, he superintended the education of his nephew Pliny the Younger and for his guidance wrote the three books entitled "Studiosus," a dissertation on the preparation of youthful orators.

During most of Nero's reign he apparently was without public office but near the end of it he was appointed a procurator in Spain, where, in 71, he was advised of his brother-in-law's death and of his selection as guardian of Pliny the Younger. He remained in Spain during the brief reigns and civil wars of Galba, Otho and Vitellius and returned to Rome some time before 73, where he was favorably received by the Emperor Vespasian. At this time he wrote the history of his own period, completing the work on Roman History which Aufidius Bassus had started and continued the collection of the immense body of material from

which he compiled his "Historia Naturalis," published about 77.

He died in 79, a victim of scientific curiosity. He was stationed at this time off Misenum in command of the Roman fleet protecting part of the Mediterranean when the great eruption of Vesuvius occurred. Anxious to examine the event at closer range, he landed at Stabiae despite the falling ashes and other signs of danger and was suffocated by the fumes.

Pliny's appetite for knowledge was never appeased. When not attending to his duties he was reading or being read to, taking notes or making extracts. He lived in a world of books at a time when the Roman Empire was being guided by Tiberius, Caligula, Claudius and Nero. During Pliny's youth Caligula squandered in foolish building activities and harebrained carousals the state wealth that Tiberius had saved, Caligula, vertiginous with his own greatness, dressing the part of the gods, one day Apollo, the next Mercury, then Jupiter, at first popular, then unpopular, feeble minded, boldly incestuous, looter of Gaul, torturer of the people for minor offenses and for no offense until the dagger ended his life.

When Pliny was about eighteen, Caligula was succeeded by Claudius, imbecilic husband of Messalina, centre of feminine and official machinations involving banishment and murder, who nevertheless conducted a successful crusade in Britain and built one hundred miles of aqueducts to supply Rome with water before he was poisoned. Although immersed in the writings of the Greeks, Pliny could not have been unaware of the enigmatic antics of Nero, popular and gentle ruler while Seneca was his chief minister, as common as the crowd until he became intoxicated with praise, roving musical composer, poet, singer and chief actor in theatres in which it was treason to leave while he was on the stage, companion of actors, hunters and prize-fighters, awarding himself first prize at the circus and races when he came in last, making the Roman nobles perform for the edification of the proletariat, staging immense spectacles in which panthers, lions, Spanish bulls, leopards, archers, warriors, wild elephants, gladiators, trained geese, charioteers, slaves, criminals and Christians furnished unique and bloody entertainment, slayer of his wife and mother, poisoner of Britannicus, lecherous, bacchanalian

gastronome, collaborator in the fire that destroyed three-fourths of Rome, blaming the Christians and torturing them, undertaking the reconstruction of the city at enormous expense with excessive taxation, and committing suicide by request. Vespasian, whose death occurred a few months before Pliny's, was a plain man, a brave soldier, close fisted, practical, who rebuilt the Capitol, protected the provinces, erected the Colosseum and died naturally.

Of Pliny's works, only his "*Historia Naturalis*" has come down to us and this is composed of extracts from some 2,000 volumes by physicians, travellers, philosophers, historians, etc. Pliny was a prodigious compiler and as he had little or no first-hand knowledge of the subjects he occupied himself with, he was unable to separate fact from fable, nor did he use rare discrimination in selecting his extracts, the marvelous having the most attraction for him. It is not natural history as we think of that subject now, but includes, without philosophical arrangement, discussions of botany, astronomy, meteorology, anthropology, zoology, etc., interlarded with various digressions. Although Pliny is not dependable as a naturalist, even in the broadest sense, his work has long been valuable as a source of pure Latinity, and as the only fountainhead for certain details on a large number of subjects. From his writings Macgillivray gathers that Pliny had doubts concerning the existence of God, that he disbelieved in the immortality of the soul and that he was opposed to luxury, cruelty, effeminacy and all kinds of vice.

His "*Historia Naturalis*" is made up of thirty-seven books, the first consisting of a dedication to Titus Vespasian, the emperor, the names of the authors whose books he consulted and a summary of every chapter. The second treats of the world, elements, stars; the seventh of man, his inventions; the eighth of land creatures and their kind; the tenth of flying fowls and birds; the eleventh of insects; the twelfth of drugs and odoriferous plants; the thirteenth of strange and foreign trees; the thirtieth of magic and medicine; the thirty-fifth of painting, color and painters; the thirty-seventh of precious stones. The chapters of each book vary in length, many of them being very short.

The eleventh book deals mainly with insects and the title and some of the chapter headings are as follows, the translation being Holland's.

"In the Eleventh Booke Are Contained the stories and natures of small creatures and such as creepe on the ground."

Chapter 1, "Of Insects in generall"; chapter 2, "The natural industrie of those Insects"; chapter 3, "Whether Insects do breath, whether they have bloud of no?"; chapter 4, "The matter & substance of the Insects bodie"; chapters 5 to 20 are on bees; chapter 21, "Of Wespes and Hornets"; chapter 25, "Of Scorpions"; chapter 27, "In what countries there bee no Grashoppers, and where they sing not"; chapter 29, "Of Locusts"; chapter 30, "Of Ants or Pismires in Italie"; chapter 32, "The diverse sorts of Insects"; chapter 34, "Of a certain creature that hath no passage to void excrements"; chapter 42, "Divers kinds of Cheese"; chapter 44, "The resemblance that Apes have to us"; chapter 45, "Of Nailles"; chapter 46, "Of Houfes"; chapter 50, "Of Tailes"; chapter 54, "How to encrease or diminish the corpulencie of the bodie, and what things with taste onely, will allay hunger and quench thirst."

Many of the chapters in the eleventh book are very short. Chapter 1, for instance, on insects in general consists of only twelve lines. Some, however, are a page or more in length. From the titles of some of the chapters one is led to expect much, but the incompleteness and generality of the text and the peculiar turn given to the subject by Pliny are disappointing. Chapter 27 is quoted in full as follows.

"Places wherein there be no Grashoppers: also where they are mute."

"In countries bare and naked of trees and wood, there breed no Grashoppers: and therefore ye shall have them at Cyrene, about the towne, but not in the plaines and fields thereof. Neither shall a man meet with them in woods that be cold and full of shade. It seemeth also, that they take a liking to some one quarter more than another; for in the region of the Milesians, few places there be that have them; but in Cephalenia, there is a river that doth limit and bound them; for of the one side there be plentie of them; and on the other, few or none. In the terri-

torie of Rhegium they be all mute. Passe the river once and come into the Locrians countrey, yee shall heare them chaunt lustily. Wings they have like to those of Bees, but larger to the proportion of their bodies."

Pliny's grasshopper, from this description, is apparently the cicada. Some of his accounts deal with egg deposition of insects, feeding habits, etc., and are a little more complete than the above quotation, given as a sample. Another quotation will be sufficient to give one an idea of Pliny's entomology, which is of interest now only because of its quaintness and errors. The following is part of the chapter 35, entitled "Of Moths and Gnats."

"Wooll and cloth when they be dustie breed moths, especially if a Spider also be gotten within them. For the Spider is very thirstie, and by reason that he drinketh up all the moisture of the cloth or wooll, he increaseth the drinesse much more. In paper also they will engender. A kind of them there is that carie their coats and cases with them, as Cockles and Snails doe; but they have feet to be seen. If they be turned out of their coats or husks, they presently die. If they grow still, they will proove to be Chrysalides."

Many brief quotations from Pliny's "entomology" are to be found in Cowan's "Curious Facts in the History of Insects," published in Philadelphia in 1865. Pliny's work was translated into English in 1601 by Philemon Holland, the title of Holland's book being "The Historie Of The World, Commonly called, The Natural Historie Of C. Plinius Secundus." Until the revival of science, Pliny's work was, next to Aristotle's, the standard authority.

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